Amendments to the Specification:

Please replace paragraph **[0021]** beginning at page 4, line 26, with the following:

[0021] Figure 1 shows an alignment of the parent Pfu (SEQ ID NO:24) and Deep Vent® (SEQ ID NO:25) polymerase sequences. The hybrid protein design polymerase sequence (SEQ ID NO:27) shows the positions that vary, between the two parent sequences, which are designated by an X. "Corresponding residues" in the sequences are those residues that occur in the same position as shown in the alignment.

Please replace paragraph **[0120]** beginning at page 30, line 22, with the following:

[0120] Expression control sequences that are suitable for use in a particular host cell are often obtained by cloning a gene that is expressed in that cell. Commonly used prokaryotic control sequences, which are defined herein to include promoters for transcription initiation, optionally with an operator, along with ribosome binding site sequences, include such commonly used promoters as the beta-lactamase (penicillinase) and lactose (*lac*) promoter systems (Change *et al.*, *Nature* (1977) 198: 1056), the tryptophan (*trp*) promoter system (Goeddel *et al.*, *Nucleic Acids Res.* (1980) 8: 4057), the *tac* promoter (DeBoer, *et al., Proc. Natl. Acad. Sci. U.S.A.* (1983) 80:21-25); and the lambda-derived P_L promoter and N-gene ribosome binding site (Shimatake *et al.*, *Nature* (1981) 292: 128). The particular promoter system is not critical to the invention, any available promoter that functions in prokaryotes can be used. Standard bacterial expression vectors include plasmids such as pBR322-based plasmids, *e.g.*, pBLUESCRIPT™, pSKF, pET23D, λ-phage derived vectors, and fusion expression systems such as GST and LacZ. Epitope tags can also be added to recombinant proteins to provide convenient methods of isolation, *e.g.*, c-myc, HA-tag, 6-His (SEQ ID NO:47) tag, maltose binding protein, VSV-G tag,

anti-DYKDDDDK (SEQ ID NO:48) tag, or any such tag, a large number of which are well known to those of skill in the art.

Please replace paragraph **[0130]** beginning at page 33, line 9, with the following:

[0130] To facilitate purification of the polypeptides of the invention, the nucleic acids that encode the polypeptides can also include a coding sequence for an epitope or "tag" for which an affinity binding reagent is available. Examples of suitable epitopes include the myc and V-5 reporter genes; expression vectors useful for recombinant production of fusion polypeptides having these epitopes are commercially available (*e.g.*, Invitrogen (Carlsbad CA) vectors pcDNA3.1/Myc-His and pcDNA3.1/V5-His are suitable for expression in mammalian cells). Additional expression vectors suitable for attaching a tag to the fusion proteins of the invention, and corresponding detection systems are known to those of skill in the art, and several are commercially available (*e.g.*, FLAG" (Kodak, Rochester NY). Another example of a suitable tag is a polyhistidine sequence, which is capable of binding to metal chelate affinity ligands. Typically, six adjacent histidines (SEQ ID NO:47) are used, although one can use more or less than six. Suitable metal chelate affinity ligands that can serve as the binding moiety for a polyhistidine tag include nitrilo-tri-acetic acid (NTA) (Hochuli, E. (1990) "Purification of recombinant proteins with metal chelating adsorbents" In Genetic Engineering: Principles and Methods, J.K. Setlow, Ed., Plenum Press, NY; commercially available from Qiagen (Santa Clarita, CA)).

Please replace paragraph **[0156]** beginning at page 40, line 4, with the following:

[0156] To measure exonuclease activity, a 45 base long primer with the following sequence was synthesized: 5'-FAM-TTTTTTGAGGTGTGTCCTACACAGCGGAGTGTAGGA CACACCTCT* 3' (SEQ ID NO:49), wherein T*= is an amino-link dT with the quencher, DAB (dabcyl) attached. The sequence forms a 16 base pair stem loop structure with a T:T* mismatch

at the quencher-labeled base. The 5' unbase-paired poly T sequence keeps FAM (6 carboxy-fluorescein) in close proximity to the quenching dye so the FAM, if excited, it will not fluoresce.

Please insert the accompanying paper copy of the Sequence Listing, page numbers 1 to 79, at the end of the application.